

# Stormwater Management



FOR EASTERN WASHINGTON

## Stakeholder Workshop

*November 29, 2001*

*Moses Lake  
Convention Center*

*9:00am - 3:30pm*



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# **Agenda**

- 9:00 1. Introductions
- 9:15 2. History
- 9:30 3. Steering Committee
- 10:00 4. Consultant Support
- 10:30 \*\*\*Break
- 10:50 5. NPDES Phase II
- 11:20 6. Stormwater Manual
- 11:50 7. Cost Estimates
- 12:00 \*\*\*Lunch
- 1:30 8. Subcommittee Meetings





# Stormwater Management



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## Stakeholder Workshop

### *Introductions*



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# Stormwater Management



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### *Background and History*



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# Sorting out Regulatory Requirements

- Federal Clean Water Act
  - National Pollutant Discharge Elimination System (NPDES); Phase I and Phase II
  - Water Quality Standards, 303d List, TMDLs
- State Water Pollution Control Act



# Clean Water Act - Municipal Stormwater NPDES Permits

- 1987 Amendments - Some stormwater sources subject to Federal Clean Water Act Permit requirements
- Sources which do not require permits still must comply with state water quality standards.



# Municipal Stormwater NPDES Permits - *Phase I*

MS4s\* with a population greater than 100,000.

- The Cities of Tacoma and Seattle
- King, Pierce, Snohomish, and Clark Counties
- WSDOT

\**Municipal Separate Storm Sewer Systems*



# Industrial Activities

## Phase I

- Construction activities that disturb 5 acres or more & have surface water discharge
- Stormwater associated with industrial activities (EPA defines this category)
  - Landfills, transportation facilities with vehicle maintenance shops or activities, recycling facilities, automobile recyclers, log sort yards.





# New Federal Stormwater Requirements - Phase II

- Final Phase II rules - 12/08/99.
- Expands the municipal stormwater permit requirement to approximately 90 additional municipal entities across the State.
- For construction activities, will lower the permit threshold from five acres down to one acre or more.



# New Federal Stormwater Requirements - Phase II

- Requires Ecology to issue a Permit by 12/02
- Requires coverage under permit by 03/03
  - Mandatory coverage for ‘Urban Areas’
  - Must consider coverage for cities >10,000
  - Expands construction permit coverage to include sites > 1 Acre



# Federal Clean Water Act Section 303(d)

- Identify waters not expected to meet standards after application of technology-based treatment
- Prioritize identified waters based on severity of pollution and uses
- Establish Total Maximum Daily Loads (TMDLs) for all waters on the list
- Submit listed waterbodies every 2 years





# Washington State Water Pollution Control Act

- Not a ‘new’ law - first passed in 1945
- Requires Discharge Permits and ‘All Known, Available, and Reasonable means of Treatment’ (AKART) for discharges to ‘Waters of the State’
- Being newly applied to stormwater discharges
- Stormwater Manual is intended to be AKART for stormwater management



# Past Conferences & Workshops

- Ecology Manual Workshops - Fall 1999
- E. Washington Workshop - Moses Lake January 2000
- Focus Group Meetings - Spring 2001
- Chartering Meeting - Moses Lake June 2001



# Actions taken - Progress Made

- Project Defined - Scope of Work
- Steering Committee organized
- Consultant Selected





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### *Steering Committee and Subcommittees*



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# Steering Committee

Ecology	Tebb, Thomas	Department of Ecology - Central Region	<a href="mailto:gteb461@ecy.wa.gov">gteb461@ecy.wa.gov</a>	509.457-7107
WSDOT	Beeman, Gary Steering Committee Vice-Chair	WSDOT	<a href="mailto:beemang@wsdot.wa.gov">beemang@wsdot.wa.gov</a>	509.577-1841
WSDOT Alternate	Molash, Ed	WSDOT	<a href="mailto:molashe@wsdot.wa.gov">molashe@wsdot.wa.gov</a>	360-705-7507
Spokane County	Worley, Steve Manual Subcommittee Chair	Spokane County Public Works	<a href="mailto:sworley@spokanecounty.org">sworley@spokanecounty.org</a>	509.477-7657
City of Spokane	Brewer, Lloyd Phase II Subcommittee Vice-Chair	City of Spokane Environmental Programs	<a href="mailto:lbrewer@spokanecity.org">lbrewer@spokanecity.org</a>	509.625-6968
Phase 2 County	Knutson, John Phase II Subcommittee Chair	Yakima County Public Works	<a href="mailto:john.knutson@co.yakima.wa.us">john.knutson@co.yakima.wa.us</a>	509.574-2311
Non-Phase 2 County	Ross Dunfee Steering Committee Chair	Benton County	<a href="mailto:ross.dunfee@co.benton.wa.us">ross.dunfee@co.benton.wa.us</a>	509.786-5611
Non-Phase 2 County - Alternate	Olsen, Walt	County Road Administration Board	<a href="mailto:Walt@crab.wa.gov">Walt@crab.wa.gov</a>	360.753-5989
Phase 2 City (10 Cities)	Aldrich, Nancy Manual Subcommittee Vice-Chair	City of Richland	<a href="mailto:naldrich@ci.richland.wa.us">naldrich@ci.richland.wa.us</a>	509.942-7508
Phase 2 City (10 Cities)	Ajax, Jim	City of Wenatchee	<a href="mailto:jajax@cityofwenatchee.com">jajax@cityofwenatchee.com</a>	509.664-3361
Non-Phase 2 City	David Sypher	City of Chelan	<a href="mailto:David@nwinternet.com">David@nwinternet.com</a>	509.682.8014
Non-Phase 2 City - Alternate	Seitz, Jim	Association of Washington Cities	<a href="mailto:Jims@awcnet.org">Jims@awcnet.org</a>	360.753-4137 x129
Development	Brich, Michelle	Home Builders Association of Tri-Cities	<a href="mailto:Hba@3-cities.com">Hba@3-cities.com</a>	509.735-2745
Project Manager Ecology	Barrett, Tony	Washington Dept of Ecology	<a href="mailto:tbar461@ecy.wa.gov">tbar461@ecy.wa.gov</a>	360.407-6467



# **Communications**

Mail  
E-Mail  
Telephone  
Personal

Department of Ecology  
**Tony Barrett**

Ecology  
Web Site

Steering Committee  
**Ross Dunfee**

Stormwater Manual  
**Steve Worley**

**Project  
Documents**

NPDES Phase II  
**John Knutson**

Subcommittee  
Meetings

Consultant Manager  
**Dave Moss**

Subcommittee  
Meetings

Stormwater Manual  
**Doug Busko**

Consultant  
Web Site

NPDES Phase II  
**John Kosco**

Newsletters  
Newspapers

Public Involvement  
**Sarah Hubbard-Gray**

Open  
Houses





# *People*

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# Methods

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### *Consultant Support*



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# **Scope of Work**

1. Management, Meetings, QA/QC
2. Stormwater Technical Manual
3. Model Municipal NPDES Phase II Stormwater Program
4. Public Information / Involvement



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### *Schedule*



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# **Schedule Highlights**

1. Monthly meetings (2nd Thursdays)
2. Document preparation schedule for Manual and Model Program
3. Public Information / Involvement
4. Complete early 2003





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### ***Consultant Budget***

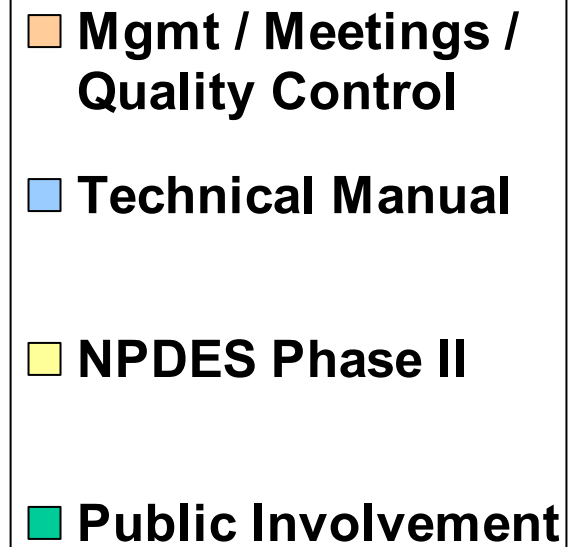
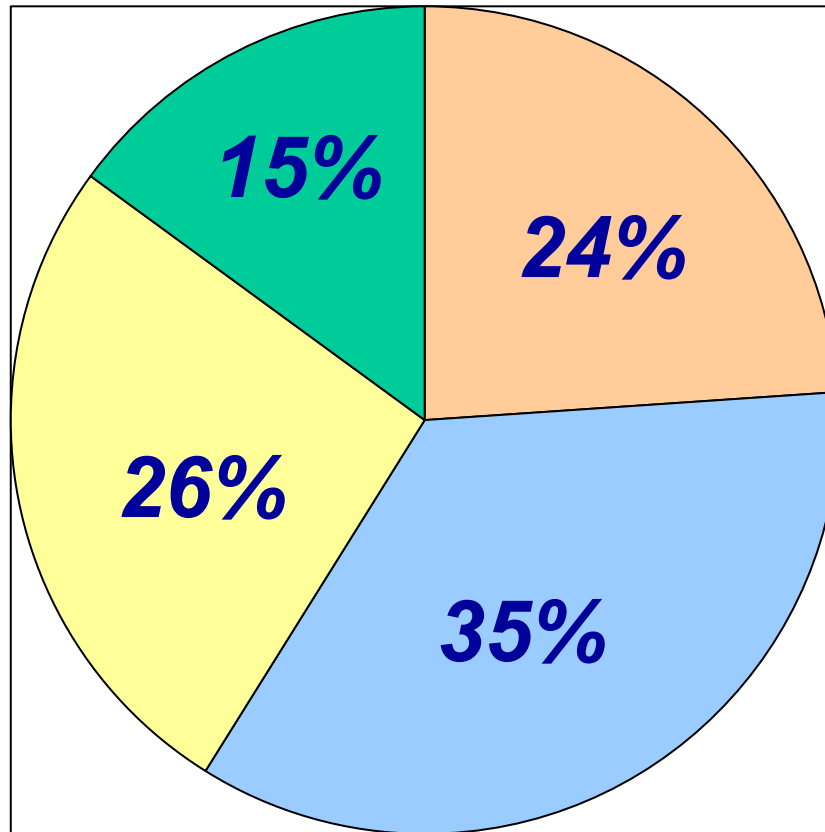


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# **Consultant Budget**

**\$350,000**



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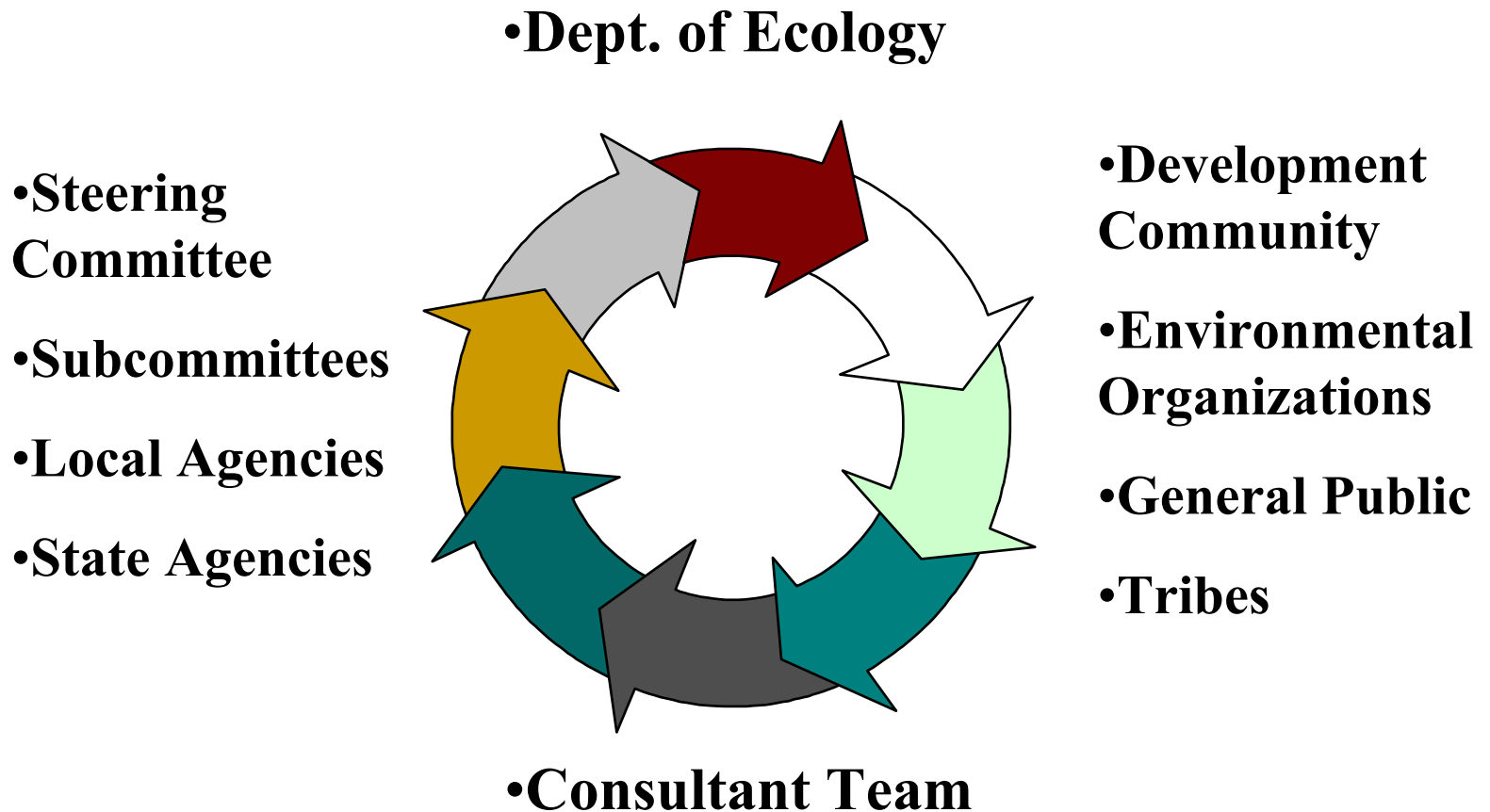
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### *Public Involvement*



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# **Comprehensive Public Process**





## **Public Involvement Goals**

- Increase awareness of stormwater management in Eastern Washington
- Understand community issues and concerns
- Identify acceptable stormwater control measures and stormwater program elements
- Generate agency and community support



# **Public Education & Involvement**

- Develop appropriate communication techniques
  - Identify stakeholders
  - Identify community distribution outlets
- Solicit input throughout project
  - Initially through stakeholder workshops
  - Ongoing through subcommittee involvement
  - Periodically through newsletters & meetings



# **Public Involvement Techniques**

- Develop & update project web page
- Develop & distribute project newsletters
- Develop & submit periodic media releases
- Develop presentation and identify presenters and presentation opportunities
- Hold public meetings (open houses) to gather comments on draft documents





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***Break***



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### ***NPDES Phase II***



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# Types of NPDES Permits

## ☐ Individual

- 1 application submitted --> 1 permit issued

## ☐ General

- 1 permit issued --> many applications submitted
- Issued on an area-wide (State, watershed, etc.) basis
- Available when:
  - Same or similar operations
  - Discharge same wastes

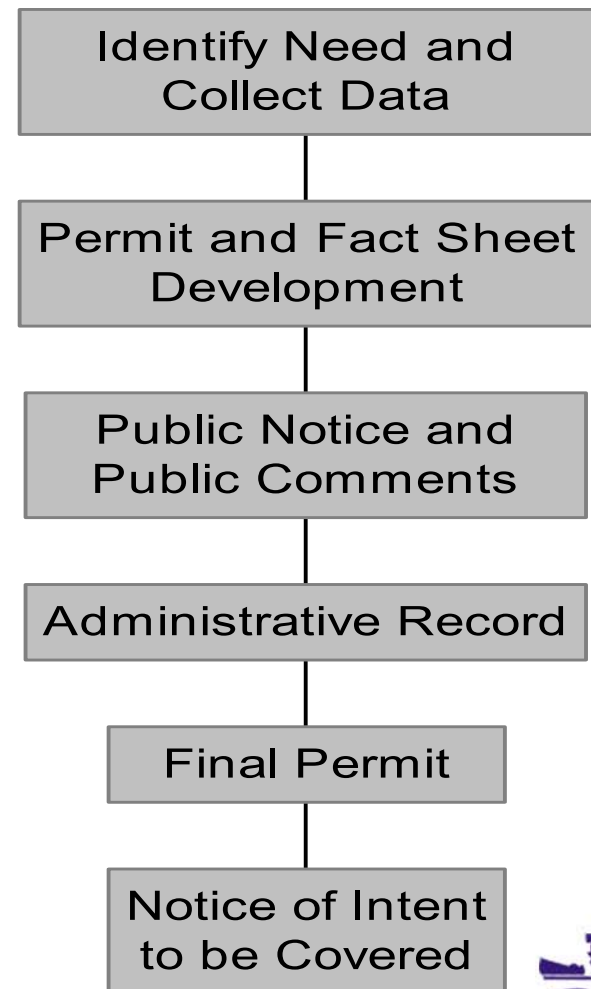
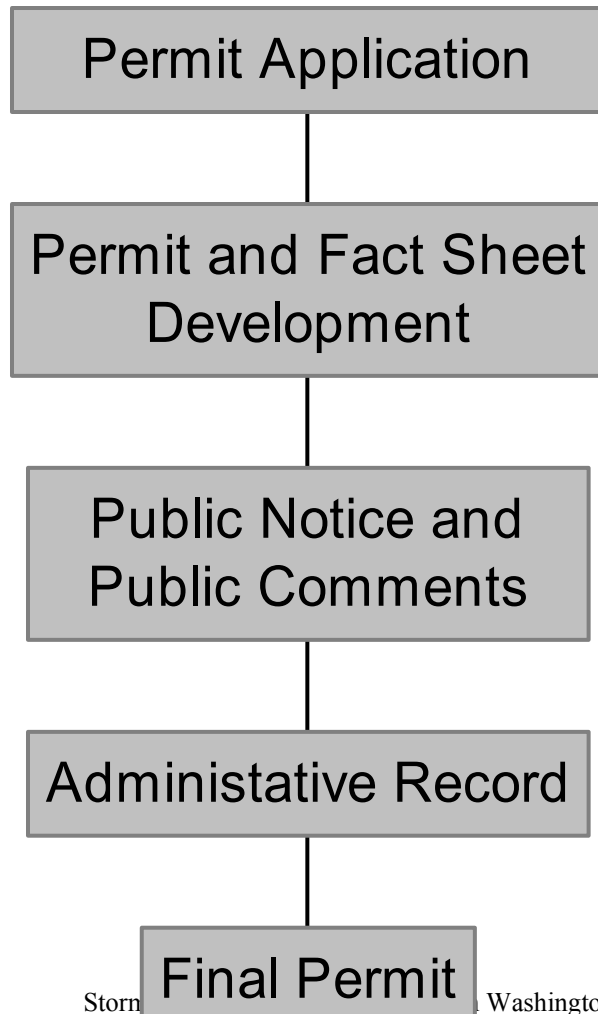




# Permit Issuance Process

## Individual

## General



# Phase II Changes to Industrial Permitting Requirements

- ❑ Revised “No Exposure” Provision
- ❑ Extended Deadline for the ISTEA Moratorium



# Phase II Changes to Small Construction Site Permitting Requirements

- ❑ All sites  $> 1$  Acre; and sites  $< 1$  Acre that are part of larger common plan
- ❑ Waivers for sites  $< 5$  Acres
  - ✓ If watershed plan or TMDL indicates stormwater controls not necessary
  - ✓ Low rainfall erosivity factor

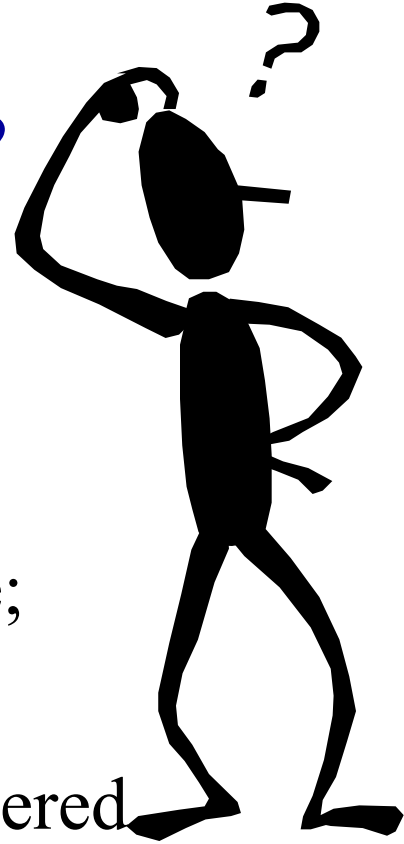




# Phase II Municipal General Permit

## Which Municipalities are Covered?

- ☐ There are Municipalities that are automatically covered
- ☐ There are Municipalities that must be evaluated for potential coverage; and
- ☐ There are Municipalities that may covered



# Municipalities Automatically Covered in Washington

- ❑ Municipalities within Urban Areas

- ✓ 8 Counties (in addition to existing Phase I)
- ✓ Approximately 73 - 76 Cities

- ❑ May exempt those under 1,000 population, provided:

- ✓ Not a Substantial Contributor
- ✓ Watershed Plan or TMDL
- ✓ Only 4 cities under 1,000 in Urban Areas



# Required Evaluation for Potential Coverage

- ❑ Substantial Contributors
- ❑ MS4s outside Urban Areas  $> 10,000$  population and density  $> 1,000/\text{sq mile}$ 
  - Estimate 15 Cities
- ❑ Discharges subject to Petition under 40 CFR 122.32(b)






## Automatic Designation: Required Coverage

County	Municipality	County	Municipality
King County		Pierce County	
	Algona		Bonney Lake
	Auburn		DuPont
	Beaux Arts		Edgewood
	Bellevue		Fife
	Bothell		Fircrest
	Burien		Gig Harbor
	Clyde Hill		Lakewood
	Covington		Milton
	Des Moines		Puyallup
	Issaquah		Ruston
	Federal Way		Steilacoom
	Hunts Point		Sumner
	Kenmore		University Place
	Kent		
	Kirkland	Snohomish County	
	Lake Forest Park		Bothell
	Maple Valley		Brier
	Medina		Edmonds
	Mercer Island		Everett
	Milton		Lynnwood
	Newcastle		Marysville
	Normandy Park		Mill Creek
	Pacific		Mountlake Terrace
	Redmond		Mukilteo
	Renton		Woodway
	Sammamish		
	SeaTac		
	Shoreline		
	Tukwila		
	Woodinville		
	Yarrow Point		

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County	Municipality	County	Municipality
King County		Pierce County	
	Algona		Bonney Lake
	Auburn		DuPont
	Beaux Arts		Edgewood
	Bellevue		Fife
	Bothell		Fircrest
	Burien		Gig Harbor
	Clyde Hill		Lakewood
	Covington		Milton
	Des Moines		Puyallup
	Issaquah		Ruston
	Federal Way		Steilacoom
	Hunts Point		Sumner
	Kenmore		University Place
	Kent		
	Kirkland	Snohomish County	
	Lake Forest Park		Bothell
	Maple Valley		Brier
	Medina		Edmonds
	Mercer Island		Everett
	Milton		Lynnwood
	Newcastle		Marysville
	Normandy Park		Mill Creek
	Pacific		Mountlake Terrace
	Redmond		Mukilteo
	Renton		Woodway
	Sammamish		
	SeaTac		
	Shoreline		
	Tukwila		
	Woodinville		
	Yarrow Point		



## Automatic Designation: Required Coverage:

County	Municipality	County	Municipality
Benton County		Spokane County	
	Kennewick		Millwood
	Richland		Spokane
	West Richland	Thurston County	
Clark County			Lacey
	Vancouver		Olympia
	Camas?		Tumwater
	Washougal?	Whatcom County	
Cowlitz County			Bellingham
	Kelso	Yakima County	
	Longview		Selah
Franklin County			Sunnyside
	Pasco		Union Gap
Kitsap County			Yakima
	Bremerton		
	Port Orchard		



# Potential Designation: Required Evaluation by Ecology

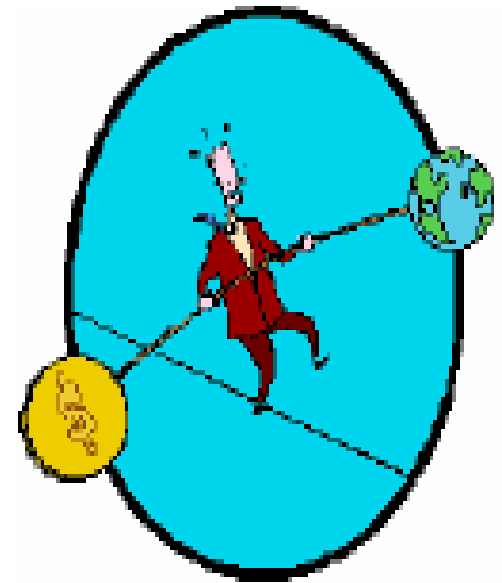
- Aberdeen
- Anacortes
- Bainbridge Island
- Camas
- Centralia
- Ellensburg
- Enumclaw
- Monroe
- Moses Lake
- Mount Vernon
- Oak Harbor
- Port Angeles
- Pullman
- Walla Walla
- Wenatchee





# Criteria for Evaluating Coverage

- Discharge to sensitive waters
- Contribute to exceedance of WQ Standard
- Significant contributor
- Ineffective control of WQ problems by other programs
- High growth/ growth potential
- High population density
- Contiguous to Urban Area



## **Phase II**

# **Implementation Issues for Washington**

**Washington's Phase II Program must address:**

- ☐ Different levels of readiness statewide
- ☐ Regional Differences in Rainfall and Runoff
- ☐ Puget Sound Plan
- ☐ Growth Management Act - Urban Growth Boundaries
- ☐ ESA - Governor's Salmon Strategy



# Minimum Control Measures for Municipal Permittees

- 1 Public education & outreach
- 2 Public involvement & participation
- 3 Illicit discharge detection & elimination
- 4 Construction site runoff control
- 5 SW management controls for new & re-development
- 6 Pollution prevention / good housekeeping for municipal operations





# Minimum Control Measure:

## Public Education and Outreach

### MUST:

- ➔ Distribute educational materials, or
- ➔ Conduct equivalent outreach activities

### RECOMMEND:

- ➔ Make use of existing materials (yours, others, etc)
- ➔ Inform public on how to get involved in storm water program activities
- ➔ Tailor program to target specific groups



# Minimum Control Measure: Public Involvement/Participation

## MUST

- ➔ Comply with State, Tribal and local public notice requirements

## RECOMMEND:

- ➔ Provide opportunities for public participation:
  - ➔ Local storm water management panel
  - ➔ Volunteer monitoring
  - ➔ Adopt-A-Stream, Stream Clean -Up Days
  - ➔ Use volunteers groups to find/map outfalls
  - ➔ Set up a hotline for water quality complaints



# Minimum Control Measure:

## Illicit Discharge Detection and Elimination

### MUST:

- ➔ Develop a sewer system map of all outfalls and the names of all receiving waters
- ➔ Prohibit non-storm water discharges, through an ordinance or other means, and implement appropriate enforcement procedures
- ➔ Implement a plan to detect and address non-storm water discharges
- ➔ Inform public of hazards associated with illegal discharges and improper disposal of waste





# Minimum Control Measure:

## Illicit Discharge Detection and Elimination

### RECOMMEND:

- ➔ A plan with procedures for:
  - Locating priority problem areas
  - Tracing the source of an illicit discharge
  - Removing the source
  - Program evaluation & assessment
- ➔ Promotion of public reporting of discharges
- ➔ Distribution of outreach materials
- ➔ Storm drain stenciling



# Minimum Control Measure:

## Construction Site Storm Water Runoff Control

### MUST:

- ➔ Develop a program to reduce pollutants from construction activities that disturb  $\geq 1$  acre
- ➔ Use an ordinance, or other regulatory means, with penalties, that requires appropriate E&S controls and requirements to control waste
- ➔ Have procedures for:
  - site plan review
  - site inspection & enforcement
  - public input



# Minimum Control Measure:

## Construction Site Storm Water Runoff Control

### RECOMMEND:

- ➔ Procedures for site plan review should include review of individual pre-construction site plans
- ➔ Procedures for site inspections and enforcement could include steps to identify priority sites based on the nature of the site, topography, soil characteristics, and receiving water quality.
- ➔ Provide appropriate educational and training measures for construction site operators





# Minimum Control Measure:

Post-construction Storm Water Management in New Development and Redevelopment

## MUST:

- ➔ Develop a program, using an ordinance or other regulatory means, to address runoff from new development and redevelopment projects that disturb  $\geq 1$  acre
- ➔ Implement strategies with a combination of structural and/or non-structural BMPs
- ➔ Ensure adequate long-term operation & maintenance (O&M) of BMPs



# Minimum Control Measure:

Post-construction Storm Water Management in New Development and Redevelopment

## RECOMMEND:

- ➔ The BMPs chosen should:
  - be appropriate for the local community
  - minimize water quality impacts
  - attempt to maintain pre-development runoff conditions
- ➔ Participate in watershed planning efforts
- ➔ Assess existing ordinances, policies, and programs that address storm water runoff quality
- ➔ Provide opportunities for public participation



# Minimum Control Measure:

## Pollution Prevention/Good Housekeeping for Municipal Operations

### MUST:

- ➔ Develop an O&M program to prevent or reduce pollutant runoff from operations
- ➔ Include employee training to prevent and reduce storm water pollution from activities such as the maintenance of park and open space, buildings, and storm water systems.





# Minimum Control Measure:

## Pollution Prevention/Good Housekeeping for Municipal Operations

### RECOMMEND:

- ➔ Maintenance activities and schedules, and long-term inspection procedures
- ➔ Controls on the discharge of pollutants from streets, salt/sand storage areas, waste transfer stations, etc.
- ➔ Procedures for disposing of waste from the MS4
- ➔ Ways to ensure new flood management projects assess impacts on water quality



# MODEL PROGRAM KEY ELEMENTS

## Sample Outline of the Phase II Model Program based on the 6 Minimum Measures



# Introduction

- **Background and Intent**
- **Vision Statement**
- **Steering and Subcommittee**
- **Organization and Use of this Model Program**
- **Relationship of NPDES regulations to other federal laws and regulations (Clean Water Act, Safe Drinking Water Act) and to state laws and regulations (State Water Pollution Control Act).**



# Public Education and Outreach

- **Develop resource library**
- **Develop new materials where existing are not available or appropriate**
- **Present options for partnership**
- **Present options for all types of media – print, TV, radio, web**
- **Develop materials for different types of audiences**
- **Look for cooperative efforts and economies of scale**





# Public Participation/Involvement

- **Build on existing efforts.**
- **Develop range of ideas for different sizes of communities**
- **Develop volunteer programs that can be implemented with existing Staff)**
- **Look for cooperative efforts and economies of scale**



# Illicit Discharge Detection and Elimination

- **Develop requirements to map and inventory existing system**
- **Develop inflow/infiltration testing and standards for communities with storm sewer systems**
- **Link to education efforts**



# Construction Site Runoff Control

- **Refer to manual**
- **Add summary of communities permit and inspection requirements**



# Post-Construction Runoff Control

- **Refer to manual**
- **Add summary of communities permit and inspection requirements**
- **Identify regional differences**





# Pollution Prevention/Good Housekeeping

- **Provide detail of municipal operations and improvement areas**
- **Storm drain maintenance and cleaning**
- **Roadway maintenance and cleaning**



# Stormwater Management



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# *Stormwater Manual*



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# Stormwater Manual Sections

1. Introduction
2. Minimum Requirements and Special Requirements
3. Drainage Plan Submittal and Calculations
4. Hydrologic Design
5. Infiltration/Detention Design
6. Water Quality Facility Design
7. Temporary Erosion and Sedimentation Control
8. Source Control



# Minimum Requirements

1. Erosion Control Standards
2. Source Control of Pollution
3. Preservation of Natural Drainage System and Outfalls
4. Runoff Treatment - Water Quality
5. Flow Control - Infiltration/Detention
6. Maintenance and Operations





# Special Requirements

- Direct Discharge to Stream or Lake
- Discharge to Wetlands
- Sole Source Aquifer
- Floodplains
- Critical Drainage Areas
- Drainage Basin Plans



# Applying Minimum Requirements

- Project Size (Threshold Level)
- Size of Redevelopment Project
- Climatic Region
- Discharge Location - to Ground or Surface Waters



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### *Hydrology*

*(Separate Slides)*



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### *Cost Estimates*



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# **\$ Estimates - NPDES II**

- a. Minimum Program
- b. Larger Program
- c. Smaller Community
- d. Larger Community



## **\$ Estimates - BMP Implementation**

- Site-specific analysis of costs to comply with minimum requirements
- Example sites as basis for analysis
- Construction-phase and permanent stormwater control costs
- Incorporate variables that affect cost:
  - different soil types / regions
  - different kinds of project sites



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***Lunch***  
***(on your own)***



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### *Subcommittee Meetings*



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